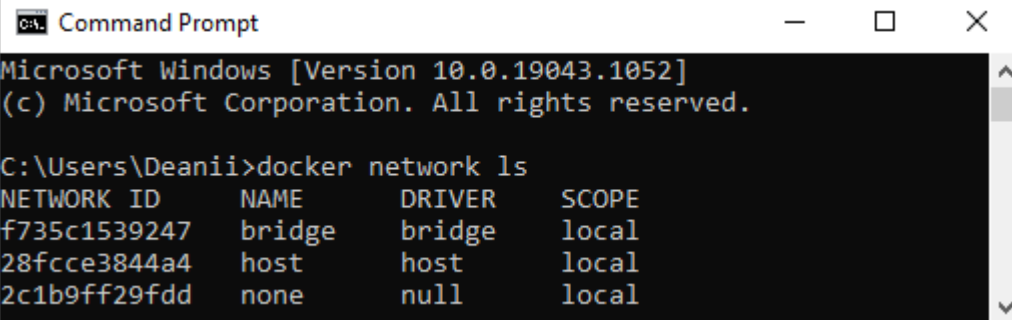


Dean Jedrick Y. Lagonsin
2018-07749

Feature Activity 6 Documentation

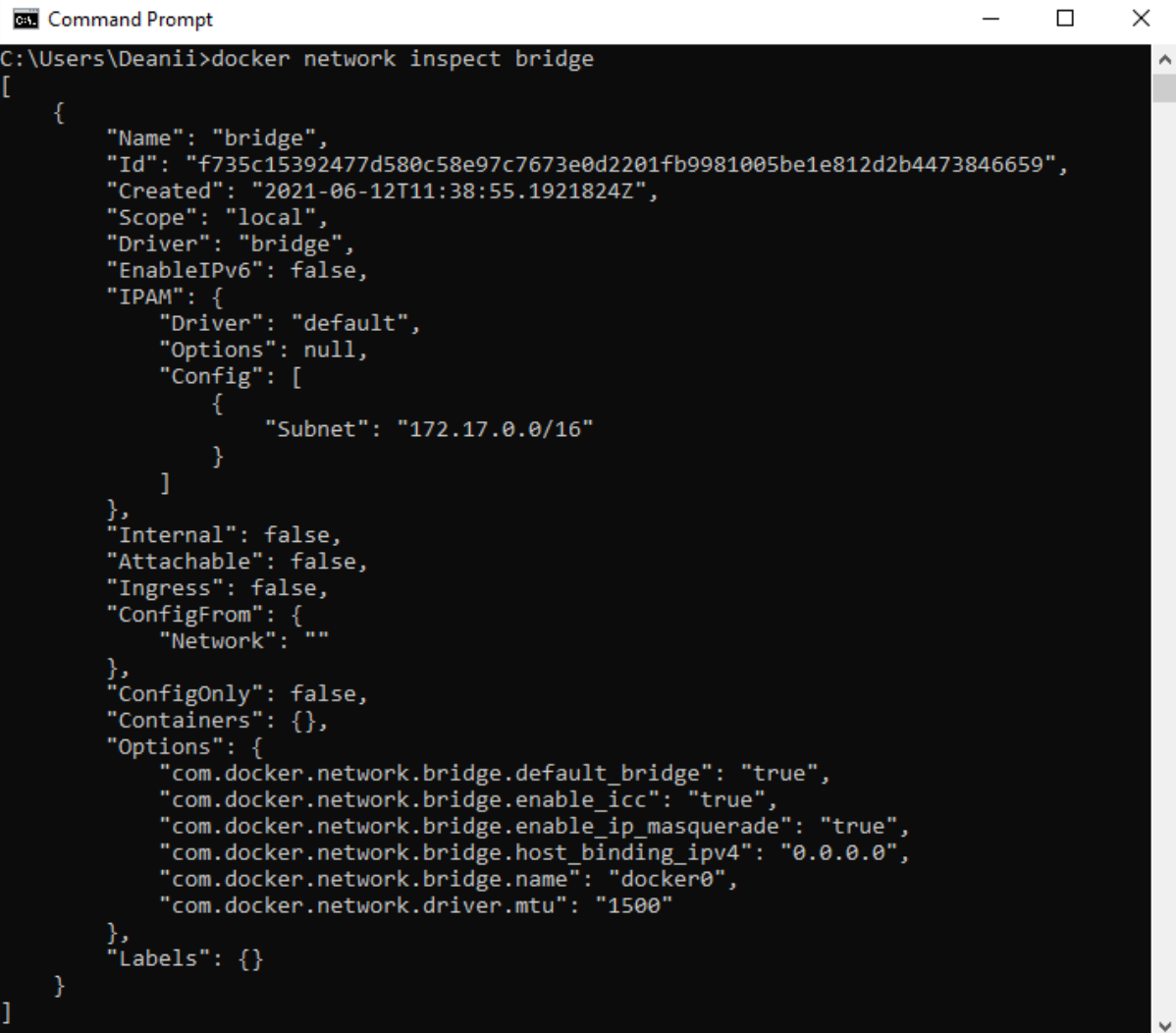
Listing networks



```
Microsoft Windows [Version 10.0.19043.1052]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Deanii>docker network ls
NETWORK ID        NAME              DRIVER            SCOPE
f735c1539247      bridge           bridge            local
28fcce3844a4      host             host              local
2c1b9ff29fdd      none             null              local
```

The default bridge network



```
C:\Users\Deanii>docker network inspect bridge
[
  {
    "Name": "bridge",
    "Id": "f735c15392477d580c58e97c7673e0d2201fb9981005be1e812d2b4473846659",
    "Created": "2021-06-12T11:38:55.1921824Z",
    "Scope": "local",
    "Driver": "bridge",
    "EnableIPv6": false,
    "IPAM": {
      "Driver": "default",
      "Options": null,
      "Config": [
        {
          "Subnet": "172.17.0.0/16"
        }
      ]
    },
    "Internal": false,
    "Attachable": false,
    "Ingress": false,
    "ConfigFrom": {
      "Network": ""
    },
    "ConfigOnly": false,
    "Containers": {},
    "Options": {
      "com.docker.network.bridge.default_bridge": "true",
      "com.docker.network.bridge.enable_icc": "true",
      "com.docker.network.bridge.enable_ip_masquerade": "true",
      "com.docker.network.bridge.host_binding_ipv4": "0.0.0.0",
      "com.docker.network.bridge.name": "docker0",
      "com.docker.network.driver.mtu": "1500"
    },
    "Labels": {}
  }
]
```

```
Command Prompt
C:\Users\Deanii>docker run --rm -d --name dummy djylagonsin/ping:1.0
80cef9fef755334a598ac08bf9dca7156cd20d32003c7d74e3e564bf2ec0641f

C:\Users\Deanii>docker network inspect bridge
[
  {
    "Name": "bridge",
    "Id": "f735c15392477d580c58e97c7673e0d2201fb9981005be1e812d2b4473846659",
    "Created": "2021-06-12T11:38:55.1921824Z",
    "Scope": "local",
    "Driver": "bridge",
    "EnableIPv6": false,
    "IPAM": {
      "Driver": "default",
      "Options": null,
      "Config": [
        {
          "Subnet": "172.17.0.0/16"
        }
      ]
    },
    "Internal": false,
    "Attachable": false,
    "Ingress": false,
    "ConfigFrom": {
      "Network": ""
    },
    "ConfigOnly": false,
    "Containers": {
      "80cef9fef755334a598ac08bf9dca7156cd20d32003c7d74e3e564bf2ec0641f": {
        "Name": "dummy",
        "EndpointID": "fa6ea77e11b3ce1795d90a927bbda3d24a00fec261e5a8e8940160e7bf1a0b49",
        "MacAddress": "02:42:ac:11:00:02",
        "IPv4Address": "172.17.0.2/16",
        "IPv6Address": ""
      }
    },
    "Options": {
      "com.docker.network.bridge.default_bridge": "true",
      "com.docker.network.bridge.enable_icc": "true",
      "com.docker.network.bridge.enable_ip_masquerade": "true",
      "com.docker.network.bridge.host_binding_ipv4": "0.0.0.0",
      "com.docker.network.bridge.name": "docker0",
      "com.docker.network.driver.mtu": "1500"
    },
    "Labels": {}
  }
]
```

```
Command Prompt
C:\Users\Deanii>docker run --rm -d -e PING_TARGET=172.17.0.2 --name pinger djylagonsin/ping:1.0
a6d720f6903318db65723ec555e9960b32f4464522965d872ca66cf4ef1da567

C:\Users\Deanii>docker ps
CONTAINER ID   IMAGE               COMMAND                  CREATED        STATUS        PORTS          NAMES
a6d720f69033   djylagonsin/ping:1.0  "sh -c 'ping $PING_I..." 3 seconds ago  Up 3 seconds          pinger
80cef9fef755   djylagonsin/ping:1.0  "sh -c 'ping $PING_I..."  About a minute ago  Up About a minute      dummy

C:\Users\Deanii>docker logs pinger
PING 172.17.0.2 (172.17.0.2) 56(84) bytes of data.
64 bytes from 172.17.0.2: icmp_seq=1 ttl=64 time=0.060 ms
64 bytes from 172.17.0.2: icmp_seq=2 ttl=64 time=0.044 ms
64 bytes from 172.17.0.2: icmp_seq=3 ttl=64 time=0.043 ms
64 bytes from 172.17.0.2: icmp_seq=4 ttl=64 time=0.033 ms
64 bytes from 172.17.0.2: icmp_seq=5 ttl=64 time=0.034 ms
64 bytes from 172.17.0.2: icmp_seq=6 ttl=64 time=0.055 ms
64 bytes from 172.17.0.2: icmp_seq=7 ttl=64 time=0.051 ms
64 bytes from 172.17.0.2: icmp_seq=8 ttl=64 time=0.043 ms
64 bytes from 172.17.0.2: icmp_seq=9 ttl=64 time=0.042 ms
64 bytes from 172.17.0.2: icmp_seq=10 ttl=64 time=0.057 ms
64 bytes from 172.17.0.2: icmp_seq=11 ttl=64 time=0.034 ms
64 bytes from 172.17.0.2: icmp_seq=12 ttl=64 time=0.092 ms
64 bytes from 172.17.0.2: icmp_seq=13 ttl=64 time=0.034 ms
```

```
Command Prompt
C:\Users\Deanii>docker run --rm -d -e PING_TARGET=dummy --name pinger djylagonsin/ping:1.0
009b0e84c51a703790795d47db0b3c81a04758dcb1b3412efa881535b1e166c3
```

```
Command Prompt

C:\Users\Deanii>docker ps
CONTAINER ID   IMAGE      COMMAND                  CREATED        STATUS        PORTS        NAMES
80cef9fef755   djylagonsin/ping:1.0   "sh -c 'ping $PING_T..."   11 minutes ago   Up 11 minutes                dummy

C:\Users\Deanii>docker stop dummy
dummy
```

Managing custom networks

```
Command Prompt

C:\Users\Deanii>docker network create skynet
bbc7a911cd90298c596e212343a83afc1bf275bc8ec76c5412d9fd1473426215

C:\Users\Deanii>docker network ls
NETWORK ID      NAME      DRIVER  SCOPE
f735c1539247    bridge    bridge   local
28fccc3844a4    host      host     local
2c1b9ff29fdd    none      null      local
bbc7a911cd90    skynet    bridge   local

C:\Users\Deanii>docker network inspect skynet
[
  {
    "Name": "skynet",
    "Id": "bbc7a911cd90298c596e212343a83afc1bf275bc8ec76c5412d9fd1473426215",
    "Created": "2021-06-12T15:55:34.5628986Z",
    "Scope": "local",
    "Driver": "bridge",
    "EnableIPv6": false,
    "IPAM": {
      "Driver": "default",
      "Options": {},
      "Config": [
        {
          "Subnet": "172.18.0.0/16",
          "Gateway": "172.18.0.1"
        }
      ]
    },
    "Internal": false,
    "Attachable": false,
    "Ingress": false,
    "ConfigFrom": {
      "Network": ""
    },
    "ConfigOnly": false,
    "Containers": {},
    "Options": {},
    "Labels": {}
  }
]

C:\Users\Deanii>docker network rm skynet
skynet

C:\Users\Deanii>
```

Adding containers to a network

```
C:\Users\Deanii>docker network rm skynet
skynet

C:\Users\Deanii>docker run --rm -d --network skynet --name dummy djylagonsin/ping:1.0
3f34fe1f80441cafff5cf3fbe4882039f3dbdaa8be1585f3895c52555bfa77c5d
docker: Error response from daemon: network skynet not found.

C:\Users\Deanii>docker ps
CONTAINER ID   IMAGE     COMMAND                  CREATED        STATUS        PORTS        NAMES
C:\Users\Deanii>docker network create skynet
275e4bec5fcbd9ada0fe7ac526aa5a997364855f232fe3b582c0d5cc0e60bbfc

C:\Users\Deanii>docker run --rm -d --network skynet --name dummy djylagonsin/ping:1.0
9e2c3d83ed8e10ac42b618d33bd0069b054b630b1909963f56f0f4b59f37efe9

C:\Users\Deanii>docker run --rm -d --network skynet -e PING_TARGET=dummy --name pinger djylagonsin/ping:1.0
199167b2d515a7952b22ab3a24a124a69af711c4274c8b67cadf911ec601796f

C:\Users\Deanii>docker logs pinger
PING dummy (172.19.0.2) 56(84) bytes of data.
64 bytes from dummy.skynet (172.19.0.2): icmp_seq=1 ttl=64 time=0.074 ms
64 bytes from dummy.skynet (172.19.0.2): icmp_seq=2 ttl=64 time=0.114 ms
64 bytes from dummy.skynet (172.19.0.2): icmp_seq=3 ttl=64 time=0.046 ms
64 bytes from dummy.skynet (172.19.0.2): icmp_seq=4 ttl=64 time=0.037 ms
64 bytes from dummy.skynet (172.19.0.2): icmp_seq=5 ttl=64 time=0.061 ms
64 bytes from dummy.skynet (172.19.0.2): icmp_seq=6 ttl=64 time=0.036 ms
64 bytes from dummy.skynet (172.19.0.2): icmp_seq=7 ttl=64 time=0.046 ms

C:\Users\Deanii>
```

Connecting between containers in a network

```
C:\Users\Deanii>docker run --rm -d --name widgetdb -e POSTGRES_PASSWORD=password --network skynet -p 5432 postgres
520179bd97b27c85c3536400f189fd850e68411de843dadd0267092dacb8617b

C:\Users\Deanii>docker run --rm -d --name gadgetdb -e POSTGRES_PASSWORD=password --network skynet -p 5432 postgres
07cde8efa58a8253eb65a0b357814bb2d0e72045a1ab5b41e7fa89cdd3a34cfb

C:\Users\Deanii>docker ps
CONTAINER ID   IMAGE     COMMAND                  CREATED        STATUS        PORTS        NAMES
07cde8efa58a   postgres  "docker-entrypoint.s..." 3 seconds ago  Up 2 seconds  0.0.0.0:57642->5432/tcp  gadgetdb
520179bd97b2   postgres  "docker-entrypoint.s..." 11 seconds ago Up 10 seconds  0.0.0.0:57641->5432/tcp  widgetdb

C:\Users\Deanii>docker exec -it widgetdb /bin/bash
root@520179bd97b2:/# psql -U postgres
psql (13.3 (Debian 13.3-1.pgdg100+1))
Type "help" for help.

postgres=# \q
root@520179bd97b2:/# psql -U postgres -h gadgetdb
Password for user postgres:
psql (13.3 (Debian 13.3-1.pgdg100+1))
Type "help" for help.

postgres=# \q
root@520179bd97b2:/# exit
exit

C:\Users\Deanii>docker stop widgetdb gadgetdb
widgetdb
gadgetdb

C:\Users\Deanii>
```

Binding ports to the host

```
C:\Users\Deanii>docker run --rm -d --name widgetdb -e POSTGRES_PASSWORD=password --network skynet -p 5432:5432 postgres
066ca390a3e66d9f5d3e1b048aeabb138c8d9b2f9747e4fc0e1613021703661b

C:\Users\Deanii>psql -U postgres -h localhost
'psql' is not recognized as an internal or external command,
operable program or batch file.

C:\Users\Deanii>docker stop widgetdb
widgetdb

C:\Users\Deanii>
```